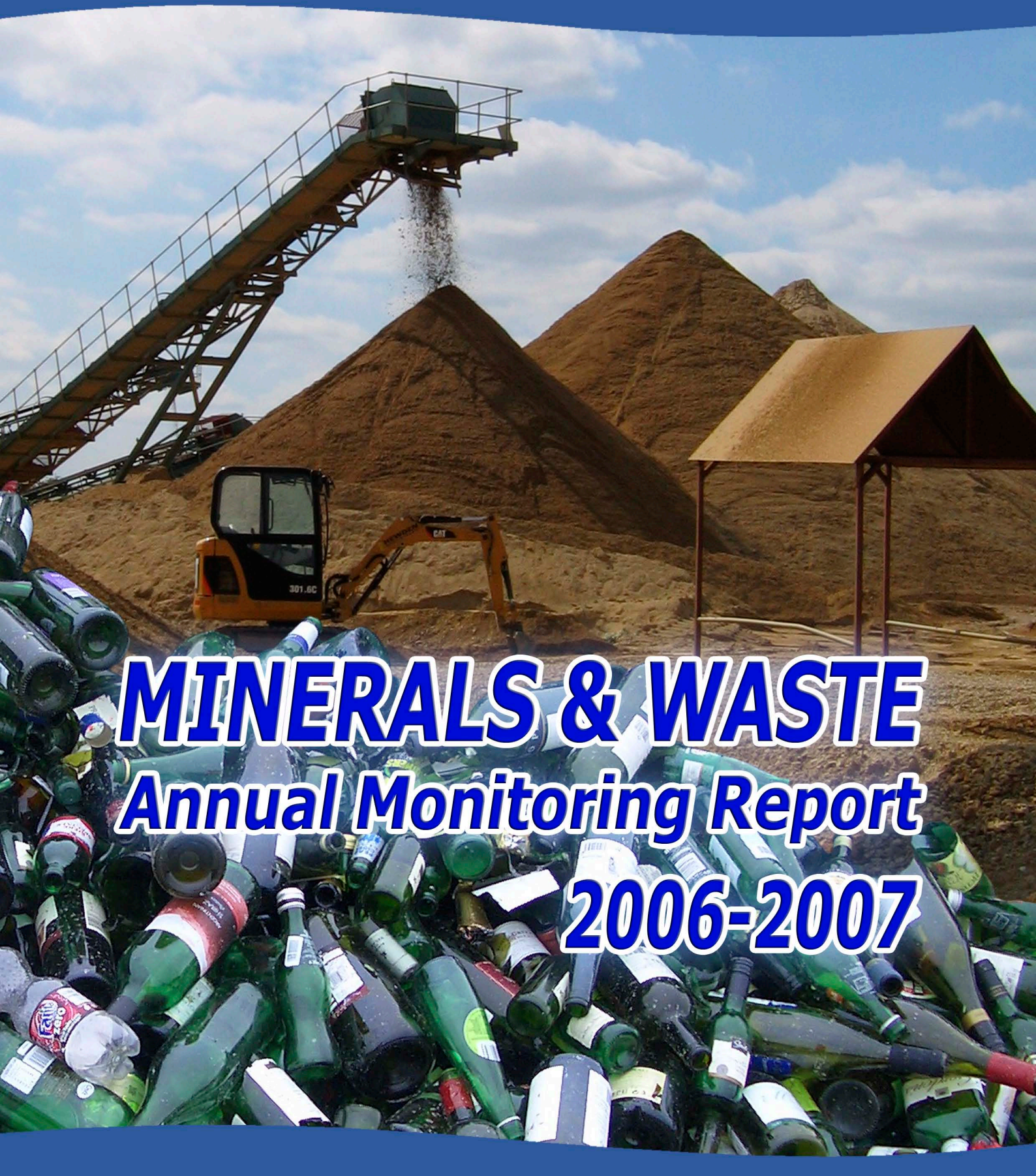
Gloucestershire
COUNTY COUNCIL



MINERALS & WASTE
Annual Monitoring Report
2006-2007

The Minerals & Waste Annual Monitoring Report (AMR) is a local development document of the Gloucestershire Minerals and Waste Development Framework

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Section 1

Introduction to Annual Monitoring

1. County Councils are required to prepare Minerals and Waste Development Frameworks (MWDFs). These comprise of a suite of documents that will provide the framework for determining future mineral and waste proposals.

2. The documents planned for inclusion in the framework are as follows –

   - **A Minerals and Waste Development Scheme (MWDS) -** the timeframe for the production of other MWDF documents;
   - **A Statement of Community Involvement (SCI) -** how and when the community will be consulted on the preparation of local documents;
   - **Development Plan Documents (DPDs) -** which provide the spatial vision, objectives and policies for delivering the framework;
   - **Supplementary Planning Documents (SPDs),** which provide additional guidance on the implementation of policies set out in DPDs; and
   - **An Annual Monitoring Report (AMR).**

Requirements for Annual Monitoring Reports (AMRs)

3. AMRs are a statutory requirement under the Planning and Compulsory purchase Act (2004). In producing an AMR local planning authorities must achieve 5 key tasks. These are set out by Local Planning Regulation 48 and are summarised below –

   - **Review** the **'actual' progress** of local development documents against the timetable and milestones of the approved Local Development Scheme;
   - **Assess** whether **policies and targets** in local development documents have been met;
   - **Identify** the **impacts of policies** in local development documents on national and regional policy targets;
   - **Assess** whether **policies** in local development documents **need adjusting** or replacing to reflect changing circumstances;
   - **Identify** the **significant effects** resulting from the implementation of policies in local development.

Annual Monitoring Regime

Overview

4. This report represents the third AMR for minerals and waste in Gloucestershire. It updates annual monitoring information for the county for the period April 2006 to March 2007. It also aims to refine the monitoring programme for local minerals & waste policy by taking into account the Sustainability Appraisal (SA) objectives developed for emerging minerals and waste

core strategies[1]. The purpose of this revised monitoring exercise is to more closely align the evidence base for emerging minerals and waste spatial policies with the existing adopted plans. This approach should enable better comparative assessment of historic data, particularly for establishing trends and / or changes over time.

Developing the Monitoring Framework

5. The AMR process for Gloucestershire is based upon the planning monitoring regime of *'objectives-indicators-targets'*. This approach is advocated by national guidance as set out in Local Development Framework Monitoring: *A Good Practice Guide.*

6. Defining clear objectives to be measured against a combination of indicators and targets is the mechanism for delivering the monitoring framework. The results of this exercise will provide the information to inform the evidence base for future minerals and waste policy work.

Monitoring Objectives (MOs)

7. The Monitoring Objectives (MOs) used in this AMR represent an evolution of those used previously in annual monitoring reports. The objectives align themselves with those of the Sustainability Appraisal Framework applied to the preparation of emerging documents for the MWDF. More information on MOs is contained within Section 3 of this report.

Contextual Indicators (CIs)

8. Contextual indicators (CIs) establish what is currently happening in terms of minerals and waste developments in Gloucestershire. For the AMR they are presented as a series of headlines, which provide socio-economic, environmental and demographic information relevant to minerals and waste policies and strategies that are currently in operation.

Output Indicators (OIs)

9. Output Indicators (OIs) aim to measure quantifiable impacts and events, which are directly related to the delivery of minerals and waste policies and strategies. There are two types of OIs;

- **Core Output Indicators (COIs)**; and
- **Local Output Indicators (LOIs)**

Core Output Indicators (COIs) are a requirement of all AMRs and should provide a clear and consistent data source across local authorities for strategic level monitoring by national and regional planning bodies. There are currently four COIs for minerals and waste. These are listed below.

- Production of primary land won aggregates.
- Production of secondary / recycled aggregates.
- Capacity of new waste management facilities by type.

[1] Gloucestershire County Council is currently in the process of producing Minerals & Waste Core Strategies to form part of the Minerals Waste Development Framework (MWDF), which will replace the existing adopted Minerals & Waste Local Plans. For more information please refer to section 3 of this report.

- Amount of municipal waste arising, and managed by management type, and the percentage each management type represents of waste managed.

10. *Local Output Indicators (LOIs)* – provides more specific information on the monitoring of local plan policies. The results of these indicators will play a major role in providing the evidence base for preparing spatial policies and strategies for emerging DPDs.

11. The combined OIs represent the delivery of the monitoring framework. They will provide the picture of how minerals and waste policies are being implemented. Through the use of revised monitoring objectives in this AMR, the combined OIs should also give an indication as to the current level of *'sustainability'* of new minerals and waste developments in Gloucestershire.

Targets

12. Previous AMRs included a number of targets for the monitoring of objectives included in each report. These targets were based on **(SMART)** principles, which seek the – **s**pecific; **m**easurable, **a**chievable; **r**ealistic, and **t**imely monitoring of objectives.

13. This AMR proposes to review the previous suite of targets. This is in response to the change in emphasis concerning sustainability and the reworking of monitoring objectives. It is envisaged that new targets may also evolve with the advent of new information and datasets.

Partnership Working

14. Involving key monitoring stakeholders is essential for developing a robust dataset to underpin the AMR process. Appendix A of this report outlines the key monitoring stakeholders involved in the process. To avoid duplication and to encourage consistency of data collection, a draft version of the AMR will be sent to each monitoring stakeholder, prior to the formal submission of the AMR to the Secretary of State in December 2007.

Section 2
Contextual Indicators for Minerals and Waste

Contextual Indicators (CIs) – A Spatial Portrait

15. CIs establish a baseline of data in terms of minerals and waste developments in Gloucestershire. For the purposes of the AMR, CIs are presented as a series of headlines, which provide a spatial portrait of minerals and waste in the county. The base date for CIs is 2005 to 2006, unless otherwise stated.

This is Gloucestershire

16. Gloucestershire covers an area of 1,020 square miles (*2,650 square kilometres)*. It operates a two-tier local authority system made up of a County Council and six District Councils – Cheltenham Borough; Cotswold; Forest of Dean; Gloucester City; Stroud and Tewkesbury Borough.

Geographic and Locational CIs

17. The county's mineral resources are of local and regional significance. They mostly lie within rural areas away from the principal urban areas of Gloucester and Cheltenham. Three key resource zones or areas are currently being worked: –

- **The Forest of Dean** – which provides for limestone used as a crushed rock; coal; clay and natural building & roofing stone from limestone and sandstone;
- **The Cotswolds** – which includes limestone used as a crushed rock and natural building & roofing stone; and
- **The Upper Thames Valley** – which provides for a supply of sand & gravel.

18. A further resource area for sand & gravel and clay known as the **Severn Vale Corridor**, has also been identified in the county. However, the significance of this area's resources is as yet unknown. Whilst the area has been subject to working in the past, the current level of activity and production is far less than experienced in the main areas set out above.

19. In contrast a significant number of the county's waste management facilities are located relatively close to / or within urban settings. This is a consequence of complex spatial and land-use factors including – proximity to waste arisings, land ownership, land availability and transport.

20. There are also 3 main landfill sites present within Gloucestershire. Two are located to the north of Cheltenham and one on the

western side of Gloucester. The situation of these three landfill sites is fundamentally based on their geological and technical acceptability *(i.e. massive underlying clay lithology, which has impermeable properties for ensuring technically acceptable conditions for landfilling)*.

Mineral Reserves and Supplies CIs

21. As at the end of 2005, mineral reserves totalled 41.5 million tonnes. This was divided between: –

    - **28.85mt** for limestone used as a crushed rock;
    - **7.85mt** for sand & gravel;
    - **1mt** for clay; and
    - **3.8mt** for non-aggregate purposes such as natural building & roofing stone and agricultural lime.

22. Based on forecast provision rates for Gloucestershire[2], remaining reserves at the end of 2005 provided an aggregate landbank equal to –

    - **11.82 years**[3] for crushed rock; and
    - **6.88 years** for sand & gravel

23. Accounting for current production levels, clay operations would also have supported up to 14.3 years worth of future working.

24. Due to the complexity and variability of Gloucestershire's non-aggregate mineral reserves, there are no landbank calculations available for natural building & roofing stone or agricultural lime.

25. As at 31/12/2005 over 3 million tonnes of mineral was supplied from operations within Gloucestershire. The breakdown of supplies is as follows –

    - **1,95mt** of limestone used as a crushed rock;
    - **1,03mt** of sand & gravel;
    - **66,000t** used for natural building & roofing stone;
    - **70,000t** of Clay[4]

26. A small quantity of coal was also supplied during 2005, by free-mining operations in the Forest of Dean. However, there are no exact figures at this time.

27. Aggregate supply trends for the period 2001-2005 are available for both limestone used as crushed rock and sand & gravel. These represent an annual average of –

    - **1.37 mtpa** for limestone used as a crushed rock; and
    - **0.8. mtpa** for sand and gravel.

[2] The forecast provision rates for the county are based on the provision requirements as set out in the regional aggregate guidelines for the South West (2001-2016). The headline annual provision rates to meet the local requirements are 2.44 million tonnes for crushed rock and 1.14 million tonnes per annum for sand & gravel.

[3] The countywide crushed rock landbank can be further divided between the Forest of Dean resource area (10.70 years) and the Cotswolds resource area (14.47 years).

[4] Estimation based on 2004 figures collected by the MPA

Waste Management CIs

28. During the period 2005 – 2006, licensed waste management facilities in Gloucestershire handled around 1.25 million tonnes of waste[5]. The tonnage breakdown between waste streams was as follows –

- **0.32mt** of Municipal Solid Waste (MSW);
- **0.46mt** of Commercial & Industrial Waste (C&I);
- **0.40mt** of Construction & Demolition Waste (C&D); and
- **72,000t** of hazardous waste[6].

Managing MSW

29. MSW in Gloucestershire is made up of waste collected from households *(96%)* together with a small amount of 'trade' waste from local shops and businesses.

30. Between 2005 – 2006 around 30% of MSW was recycled or composted. The remainder, 70% was disposed of to landfill.

[5] Waste data provided in this AMR is from Technical Evidence Paper WCS-A Waste Data, which will shortly be available from the County Council webpage via the link to minerals & waste policy and the *'online evidence library'* http://www.gloucestershire.gov.uk/index.cfm?articleid=16093. Figures presented may differ from those previously published as a result of updated or revised data and further interpretation by the County Council as Waste Planning Authority (WPA) and Waste Disposal Authority (WDA) and the Environment Agency (EA).

[6] This is based on data provided by the Environment Agency (EA) during 2004.

Managing Commercial & Industrial (C&I) Waste

31. C&I waste managed in the county includes waste generated from businesses, shops, offices and the manufacturing sector. It is predominantly made up of biodegradable materials and metals.

32. During 2005, just over 75% of managed C&I waste constituted biodegradable and non-metal C&I materials. The remaining 25% was of metal waste from vehicle disposal and other manufacturing operations.

33. In terms of C&I management, the majority *(0.27mt)* of biodegradable and non-metal C&I materials was disposed of to landfill during 2005. The remainder *(0.08mt)* was diverted from landfill.

34. Almost all metal waste managed in Gloucestershire *(1.14mt)* was subject to recycling.

Managing Construction & Demolition (C&D) Waste

35. C&D waste in Gloucestershire comprises of inert materials such as brick, concrete and sub-soils primarily generated by the construction industry. It also includes a small biodegradable element made up of timber, plastic and metals.

36. During 2005, C&D waste handled in the county represented the largest managed waste stream totalling 30% of all waste.

37. The majority of managed C&D waste *(60%)* was transferred either for recycling, reprocessing, for use in land reclamation

and landscaping, or sent for disposal to landfill. A small proportion was directly recycled *(15%)* and the rest *(25%)* was sent straight for disposal to landfill.

38. However, it is important to recognise that managed C&D waste represents only a fraction of all C&D waste generated and handled in Gloucestershire. A significant proportion of C&D materials never enter the county's waste management system. It is directly re-used on site as a consequence of redevelopment and regeneration schemes mostly in urban settings. Furthermore, inert materials can also be transported onto other development sites without the need for processing, for use in landscaping or reclamation. This activity often falls outside of the waste management system. *'Receiver'* sites for C&D can apply for an exemption from waste licensing and may also not require a specific waste application above and beyond an extant planning permission for general development.

Managing Hazardous Waste

39. Hazardous waste usually includes substances that are recognised as being dangerous or harmful. However, it can also include wastes from everyday activities, such as engine oils, paints and batteries that if not managed correctly, might cause a health hazard.

40. The most up-to-date data on hazardous waste in Gloucestershire is for 2004. During this year 39,000 tonnes of hazardous waste arose in the county. The vast majority of this total *(38,000 tonnes)* was exported for management and / or disposal elsewhere. However, during the same period, just over 70,000 tonnes of hazardous waste was imported into Gloucestershire for management including treatment, recycling and disposal.

Spatial CIs – Employment

41. During 2005 around 1,200 people were directly employed within minerals and waste industries in Gloucestershire[7]. The majority *(over 65%)* worked in sewage, sanitation and waste disposal operations. The remainder were employed in mining and quarrying *(around 25%)* and metal recycling *(just less than10%)*.

Spatial CIs – Transport

42. Gloucestershire is serviced by a range of transport modes including road, rail, sea and inland waterways.

The Motorway & Highway Network

43. The M5 motorway acts as the main north-south route through Gloucestershire. Along the northwest county boundary lies the M50. The M4 and M48 motorways also pass close below the south of the county via a connection from the M5.

[7] This figure is based on data collected by the County Council's Research & Information (R&I) team. It is based on ONS statistics taken from the Annual Business Inquiry Employee Analysis. It covers those directly employed in sewage, sanitation and waste disposal; mining & quarrying; and metal recycling. It does not cover indirect employment often dependent upon the minerals and waste industry such as road haulage and vehicle repair and servicing.

The Rail Network

44. Gloucestershire has four rail trunk lines running through it. A mainline route bisects the county north to south. There is one operational rail freight depot run by and exclusively for the MOD at Ashchurch in Tewkesbury. A further three potential sites for rail freight have been identified at the Railway Triangle in Gloucester, Lydney Docks and Sharpness Docks.

The Waterborne Network

45. Sharpness Docks on the Severn Estuary is the most significant waterborne transport facility in Gloucestershire. It provides extensive cargo-handling facilities, port-related services and can accommodate vessels up to 6,000 tonnes. There are also two working dry docks, which continue to provide ship repair and refit facilities.

46. The Gloucester and Sharpness (G&S) Canal is a 16-mile network linking Sharpness Docks to dockside facilities in the city of Gloucester. It currently facilitates the low-level transportation of sand & gravel along the River Severn, from a quarry site in Worcestershire to a canal-side processing site south of Gloucester.

Spatial CIs – Growth

47. Employment and housing growth has been predicted within Gloucestershire for the future. The South West Regional Spatial Strategy (RSS) headlines a 3% annual growth in employment for the county. Over the long-term, this is expected to create up to 23,500 new jobs by the end of 2026. For the same period, population and housing growth is also predicted. Currently Gloucestershire's population is growing at around 0.4% a year or just over 2,500 people. By 2026, up to 48,600 new dwellings may be needed to meet the county's future population demands.

48. Employment and housing growth may pose some significant spatial challenges for minerals and waste planning in future: - not least in securing sufficient capacity for managing future waste streams; but also for ensuring there is provision to meet future demands for construction minerals.

Spatial CIs – The Environment

49. Due to the relationship between geology, landscape and valued natural environments, many of Gloucestershire's minerals and waste developments are located close to and / or within sites of environmental importance. The following bullet points outline the key environmental designations in Gloucestershire up to the end of 2005 –

- Three Areas of Outstanding Natural Beauty (AONBs), which make up to 51% of the county;
- 122 Sites of Special Scientific Interest (SSSIs);
- 264 Conservation Areas;
- 7 European Special Areas of Conservation (SACs);
- 755 Key Wildlife Sites (KWSs);
- 2 European Special Protection Areas (SPAs);
- 2 International Ramsar sites;
- 496 Scheduled Ancient Monuments (SAMs);
- 2 Registered battlefields;

- 99 Registered parks and gardens;
- 12,860 Listed Buildings;
- 23,920 Locally Important Sites;
- 10 Local Nature Reserves;
- 4 National Nature Reserves;
- 79 Conservation Road Verges; and
- 153 Regionally Important Geological & Geomorphological Sites

Spatial CIs – Renewable Energy

50. In 2006 Gloucestershire provided up to 7.5% of the South West region's total installed capacity for renewable electricity. This is equal to 9.15 Mega Watts of power, or sufficient electricity to service 8,015 homes. The majority *(just under 90%)* of the county's renewable energy was sourced from the by-products of waste management *(landfill gas)*. The remainder was made up of Solar, Wind and Hydroelectric projects.

51. A total of 8 renewable heat projects, generating up to 0.26 Mega Watts of renewable heat, were also in operation in the county during 2006. These projects applied heat pump and biomass technologies.

Spatial CIs – Minerals & Waste Planning

52. Between 2001 and 2006, minerals and waste proposals in Gloucestershire have generated an average of 45 planning applications a year.

53. During the same period, the County Council has also responded to an average 190 enforcement requests per annum.

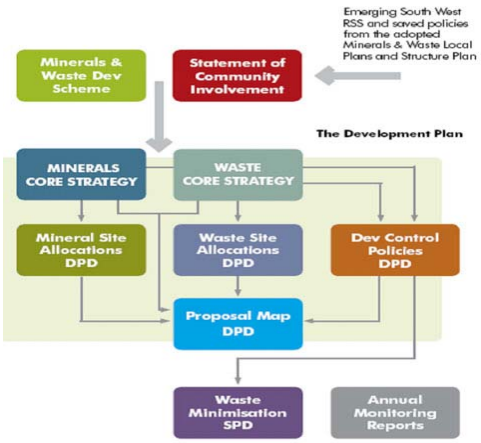
54. In October 2006 a minerals and waste site monitoring team was launched to ensure condition compliance on extant permissions. The team's key aim is to monitor all qualifying mineral and landfill sites in the county at least once a year.

Section 3
Minerals and Waste Development Scheme Monitoring

55. A key role for the AMR is to review *'actual'* progress made in producing Local Development Documents (LDDs) against the preparation timetable and milestones set out in the Minerals & Waste Development Scheme (MWDS)[8].

56. Figure 1 below illustrates the Local Development Documents (LDDs) that form part of Gloucestershire's Minerals and Waste Development Framework (MWDF).

Figure 1: MWDF in Gloucestershire



[8] More information on the MWDS can be found on the County Council webpage – http://www.gloucestershire.gov.uk/index.cfm?articleid=10577

57. The proceeding paragraphs provide a commentary on the preparation of local development documents during the AMR monitoring period (2006 – 2007). This is followed by a monitoring table, which measures document preparation against approved production milestones.

Document Commentary - Minerals & Waste Development Scheme (MWDS)

58. The Minerals and Waste Development Scheme (MWDS) is a public statement, which sets out *when* minerals and waste development plan documents (DPDs) are going to be prepared. It includes a series of production milestones for monitoring purposes. It also discusses the level of resources required and the potential constraints that may exist when preparing of DPDs. The 3rd Review MWDS provides the most up-to-date timetable covering the three-year period between 2007 and 2010. It was formally approved by the Secretary-of-State (SoS) in June 2007. Two previous MWDS documents have been produced, which covers a three-year rolling programme from 2005 onwards.

59. This AMR initially carries forward the detailed production timetable set out by the 2nd Review MWDS, which sets out the projected work programme from 2006 to 2009. Where appropriate the 3rd Review MWDS is also referred to.

Document Commentary – Supplementary Planning Document (SPD) on Waste Minimisation in Development Projects

60. The Supplementary Planning Document (SPD) on Waste Minimisation in Development Projects provides detailed policy guidance on implementing waste minimisation within all future development projects across Gloucestershire. It presently supplements Waste Policy 36 from the *'saved'* adopted Waste Local Plan. The SPD operates as a material consideration in determining planning applications, however it does not have the statutory weight given to main development plan documents (DPDs), prescribed under Section 38(6) of the Planning & Compulsory Purchase Act (2004).

61. During the monitoring period, the County Council progressed the Waste Minimisation SPD through to adoption *(September 2006)*. This process included public consultation in a formal draft *(May-June 2006)*.

62. In due course the SPD may require an update so as to link up with the relevant spatial policy or policies contained within the Waste Core Strategy (WCS) and / or future Development Control Policies DPD.

63. Detailed monitoring data on the preparation of the Waste Minimisation SPD can be found within last year's AMR.

Document Commentary – Minerals Core Strategy (MCS)

64. The Mineral Core Strategy (MCS) aims to provide the overarching framework for managing the county's mineral resources. It is a cornerstone DPD within the Gloucestershire Minerals & Waste Development Framework.

65. During the monitoring period, the County Council undertook **Issues & Options** consultation through two local forum events *(July 2006)* and the publication of a minerals summary paper and detailed technical report *(September 2006)*[9].

Document Commentary – Waste Core Strategy (WCS)

66. The Waste Core Strategy (WCS) aims to provide the overarching framework for delivering a sustainable waste management system within Gloucestershire. As with the MCS, it also represents a cornerstone DPD within the Gloucestershire Minerals & Waste Development Framework.

67. During the monitoring period, the County Council carried out **Issues & Options** consultation through the publication of a waste summary paper and detailed technical report *(July 2006)*[10]

[9] More information on the MCS Issues & Options can be found on County Council webpage – http://www.gloucestershire.gov.uk/index.cfm?articleid=14094

[10] More information on the WCS Issues & Options can be found on County Council webpage – http://www.gloucestershire.gov.uk/index.cfm?articleid=13349

Document Commentary –

Sustainability Appraisal (SA)

The County Council must carry out a Sustainability Appraisal (SA) of all development plan documents included within the Minerals & Waste Development Framework (MWDF). This requirement incorporates the European Directive on SEA – 2001/42/EC.

68. During the monitoring period, the following SA reports were published for public consultation –

- Gloucestershire MWDF Sustainability Appraisal: Scoping Report – Update 2, ***(April 2006)***.
- Gloucestershire MWDF Sustainability Appraisal: Context Report – Update 2 ***(April 2006)***;
- SPD Waste Minimisation in Development projects: SA Report on the formal Draft Consultation ***(April to June 2006);***
- Waste Core Strategy Issues & Options: SA Report ***(July 2006)***; and
- Minerals Core Strategy Issues & Options: SA Report, ***(September 2006)***;

69. All of the SA reports published to date are available to view and / or download on the County Council website.

Table 1: Monitoring Table for Document Preparation during the AMR period 1st April 2006 to 31st March 2007

MWDF Document	Document Preparation	Projected Timetable as set out under MWDS Profile[1]	MWDS Milestone Target[2] ~	Actual Production	Achieved against MWDS Profile and Milestone Targets
Supplementary Planning Document (SPD) on Waste Minimisation in Development Projects	Public participation of **formal draft** of SPD and **SA report** *(Required by Regulation 17)*	May – Jun 06	n/a	May – Jun 06	✓
	Adoption of SPD	Sep 06	n/a	Sep 06	✓
Minerals Core Strategy	Preparation **issues & options** and **SA** report	Nov 05 – Jun 06	n/a	Nov05 – Jun 06	✓
	Public Consultation on **issues & options**; - *(Under Regulation 25)*				
	1) Minerals Stakeholder Forums	July 06	n/a	July 06	✓
	2) Publication of issues & options and SA reports	Sept 06	n/a	Sept 06	✓
Waste Core Strategy	Preparation of **issues & options** and **SA** report.	Nov 05 – Jun 06	n/a	Nov 05 – Jun 06	✓
	Public Consultation on **issues & options**; - *(Under Regulation 25)*				
	1) Publication of issues & options and SA reports	July 06	n/a	July 06	✓

[1] A detailed projected timetable of production for each LDD is provided within the MWDS. For this AMR the 2nd Review MWDS (2006-2009) has been applied. Section 3 of the 2nd Review MWDS includes plan preparation stages that are not specifically measured by PPS12 milestones or national BVPI targets, but remain crucially important to the production of new LDDs.

[2] MWDS milestones are those set out in PPS12 – 1) Document commencement; 2) Preferred Options consultation; 3) Submission to the SoS; 4) 5) Pre Examination Meeting; 6) Examination; and 7) Adoption. It also includes BVPI targets – 1) Preparation of SA Scoping Report; 2) Preferred Options consultation; 3) Submission to the SoS, including SA Report; 4) Examination; 5) Adoption.

~ During the monitoring period 2006 – 2007, there were no planned production milestones or BVPI targets

Section 4
Minerals and Waste Development Monitoring

Introduction to Monitoring

70. Monitoring Objectives (MOs) applied to this AMR are based on the Sustainability Appraisal (SA) objectives developed for the emerging MWDF.

71. SA is a statutory requirement for the emerging plans, strategies and proposals contained within the MWDF. The purpose of SA is to ensure that social, environmental and economic implications of plan making are fully considered. The conclusions of SA are seen as a vital tool in promoting sustainability in spatial policies for the future.

72. Each document in the MWDF will need to be tested against the SA objectives. Therefore, these objectives represent a consistent assessment tool that runs right through the plan making process. As a consequence they have now been applied to the AMR to assist monitoring during the transitional period from minerals and waste local plans to DPDs and a MWDF. It is envisaged this approach will deliver a consistent dataset that can be applied both historically and into the future.

73. The SA objectives for the MWDF have been developed on the basis of objectives / priority actions of –

- The Government's **national sustainability strategies** – 1999 and 2005. In particular, care was taken to ensure that all of the topics listed in SEA Directive Article 2001/42/EC 5(1) Annex 1(f) are covered by the SA objectives;
- "Just Connect" the **Integrated Regional Strategy** for the South West 2004-2026;
- Other relevant **plans and programmes**, resulting from key messages and the identification of specific sustainability issues;
- ODPM (now DCLG) **Guidance**; and
- Statutory consultees and key **stakeholders**

74. In terms of the form and content of the remainder of this section, each SA objective has been assessed against a series of Core Output Indicators (COIs) and Local Output Indicators (LOIs). Where available, datasets relevant to each indicator have been collected and where appropriate SMART targets have been measured.

Previous AMR Monitoring

75. The 2005/2006 AMR was monitored against early, interim objectives developed in combination with the SA process. Since this time the SA has moved on from its original objectives and has been amended accordingly. However, where clear opportunities exist in this AMR, previous output indicators (OIs) and / or SMART targets have been carried forward.

AMR Objective 1:

"To promote development that is socially, economically and environmentally sustainable."

76. AMR Objective 1 is extremely wide ranging and could feasibly be attributed to a number of spatial planning issues. Nevertheless, for minerals and waste development, the principle of waste minimisation appears to provide the most appropriate link to delivering this objective.

77. Waste minimisation represents a proactive approach to securing better management of our resources – including construction materials and waste that is generated. These aspects form a major part of the *'sustainable development'* agenda.

78. Gloucestershire has fairly recently embraced waste minimisation into its spatial planning strategies, firstly in the Waste Local Plan *(adopted 2004)* and secondly, through the production of a supplementary planning document (SPD) entitled – *Waste Minimisation in Development Projects (adopted 2006).*

79. An important part of implementing waste minimisation is the production and adherence to plans and programmes for waste minimisation in developments. This requires detailed statements of action to accompany new proposals. At this early stage of the policy, the focus for submission statements has been on major development schemes that are submitted across the county.

80. Consequently for AMR monitoring, the submission of waste minimisation statements with major proposals has been chosen for measuring the implementation of waste minimisation. In time a more detailed monitoring system may be put in place to determine the quality of submissions.

Core Output Indicator

81. There are no core output indicators for this AMR objective.

Local Output Indicator

Number of *'Major Development'*~ applications that include a Waste Minimisation Statement as advised by the adopted WLP and the Adopted Supplementary Planning Document (SPD) for Waste Minimisation in Development Projects

~ A 'Major development' in this instance refers to a development of more than 10 houses or 0.5ha where the number of units is not defined; or over 1000sq.m in floorspace or above 1ha in size

Table 2: Number of Waste Minimisation Statements submitted (2006-2007)

District	Total no. of *'major development'* applications	No. waste minimisation statements produced	As a % of total waste minimisation statements produced
Cheltenham	52	3	50.00%
Cotswold	45	0	0%
Forest	29	0	0%
Gloucester	55	1 (3)#	16.67%
Stroud	39	0	0%
Tewkesbury	48	1	16.67%
Countywide^	18	1	16.67%
Total	**286**	**6**	

^ 'Countywide' refers to developments determined exclusively by the County Council – such as minerals & waste; and County Council run projects such as highways, libraries, and schools.

 # The number in brackets denotes applications that contained sustainability appraisals, which contain some aspects of waste minimisation, but were not sufficient to be classed as a waste minimisation statement.

NB: The figures were obtained from application data between 01/04/06 and 31/03/07

Targets

To achieve 100% submission of waste minimisation statements in the county, for all major developments by 2008.

Discussion and Commentary

82. During 2006 and 2007, only a small number of waste minimisation statements *(6)* were submitted with major development projects in Gloucestershire. This represents just over 2% of major developments brought forward for determination.

83. Cheltenham Borough was the most successful district authority in pursing waste minimisation, with just less than 6% of major developments within the district including the required statement. Cotswold, Forest of Dean and Stroud Districts did not include any submitted statements. County Council major developments, which included minerals, waste, highways and school projects, accounted for 1 waste minimisation statement, or 5% of the County Council's major developments during the monitoring period.

84. The overall number of submitted waste minimisation statements appears quite low compared to the total number of major development proposals. Furthermore, it also raises concern over the submission target of 100%, which has been set for 2008.

85. Nevertheless, a combination of factors may have contributed to the low submission rate during 2006 and 2007. These are summarised below –

- The Waste Minimisation in development Projects SPD was only formally adopted for 6 months of the monitoring period *(from September 2006)*. This document provides detailed guidance on producing waste minimisation statements. As a consequence the district planning authorities may have been reluctant and / or lacked the knowledge and confidence to apply the SPD appropriately, particularly prior to September 2006.

- The current threshold of *'major developments'* applied within the Waste Minimisation in development Projects SPD and sourced from ODPM *(now DCLG)* Development Control Statistics may prove to be too broad in the context of major development schemes in Gloucestershire. This may be best exemplified in some of the rural areas of the county such as the Cotswold district. Within this area there are a number of agricultural developments over 1 ha in size, submitted for determination each year. These proposals fall under the broad category of *'major developments'* for determination purposes. However, due to the nature and characteristics of these proposals, there is often limited scope to implement and enact waste minimisation. The same circumstance could also be applied to a number of

County Council determinations, particularly minerals proposals, which are often termed as '*major development'* due to their notable landtake *(i.e. more than 1 ha in size)*. These types of proposal rarely demonstrate any viable waste minimisation potential and as such are not actively pursued for a statement.

86. In summary, the submission of waste minimisation statements with major developments needs significant attention across the county in order to increase compliance for the coming years. This may involve greater liaison between the County and District planning functions. Furthermore, the use of *'major developments'* as a monitoring tool may need to be looked at again so as to reflect the relevance of certain major developments with the need for a waste minimisation statement.

Link to Minerals & Waste Local Plans

87. The LOI used to monitor AMR Objective 1 is directly linked to the saved WLP policy 36 –*Waste Minimisation*.

88. Other relevant policies that may be indirectly linked to this objective include – MLP policies E15, E16 and E19 relating to *safeguarding and enhancing the environment*; MLP policies A1 and A2 relating to *aggregate minerals supply* and WLP 45. However, these policies have not been monitored in this part of the AMR report as they are more appropriately covered by other objectives and local output indicators.

AMR Objective 2:

"To give the opportunity to everyone to live in an affordable and sustainably designed and constructed home."

89. Future housing need represents a key challenge for spatial planning. A growing population and more diverse households are increasing pressure on the nation's housing stock.

90. However, making provision for new homes, must be achieved *'sustainably'* – utilising our remaining resources wisely; securing environmental quality, and making sure that the necessary level of infrastructure is in place to develop thriving communities.

91. Minerals and waste planning has a vital part to play in securing new sustainable homes, particularly in making provision for minerals needed in construction, and supporting a waste management system capable of keeping up with demands.

92. A number of minerals and waste monitoring areas could be applied to achieving AMR Objective 2, however most of these are specifically covered elsewhere in this report.

93. Consequently, the focus of AMR Objective 2 is upon the link between delivering sustainable homes and producing secondary & recycled aggregates.

94. Where practicable, secondary & recycled aggregates offer a sustainable alternative to using primary construction aggregates in the building of new homes. Their sustainable credentials arise from their application of by-products and discarded mineral materials *(secondary)* and re-use of construction and demolition *(C&D)* materials *(recycled)* back into new development projects. This helps to conserve primary minerals and reduce the volume of waste being generated.

95. For monitoring purposes, annual production data on secondary & recycled aggregates acts as a basic indicator for measuring the success of policies to promote the use of these materials. In the future more sophisticated monitoring schemes may be developed to determine the level and type of use for secondary & recycled aggregates within new developments.

96. The most up-to-date data for secondary & recycled aggregates is collected for the annual period 2005. Consequently, this will be used as the base date for the AMR.

Core Output Indicator

Annual production of secondary / recycled aggregates.

97. During 2005, the estimated production of secondary & recycled aggregates in Gloucestershire totalled 0.6 million tonnes. The majority of this material *(97%)* was derived from construction and demolition *(C&D)* waste. The remainder was made up of secondary sources such as container glass and road planings.

Local Output Indicator

98. There are no local output indicators for this AMR objective.

Targets

99. There were no targets set for this AMR objective.

Discussion and Commentary

100. Capturing accurate data on secondary & recycled aggregates can be extremely challenging. In most cases it has led to the publication of estimates, rather than definitive production figures. The principal reason for this is due to the monitoring regime for recycled aggregates.

101. Construction and demolition *(C&D)* waste, which makes up a significant proportion of recycled aggregates *(97% in 2005)*, is mostly sourced from regeneration and re-development sites. The recycling of C&D materials is carried out on-site, using mobile plant, which produces a construction material that can be used in the development, primarily as a bulk fill.

102. Consequently, only a small amount of potential recycled aggregate material, which leaves the site for further waste processing, is actually recorded through the waste-licensing regime. This means only a *'snapshot'* of data is available from one year to the next.

103. To compensate for the gap in knowledge, estimates of on-site construction and demolition waste are used to make up the recycled C&D total. Estimates are based upon local mobile crushing capacity and mobile plant usage.

104. Capita Symonds, a national planning consultancy, undertook a national project on behalf of DCLG on the production of secondary & recycled aggregates *(February 2007)*[1]. The estimated figures for Gloucestershire 2005 were developed out of two data reports and form the basis for this AMR's dataset.

105. In the near future, the AMR monitoring programme will endeavour to update the dataset for each year. Where it remains relevant, the formula applied by Capita Symonds' work will also be used. Nevertheless, further local survey and assessment work is being considered to improve on the dataset to provide a more coherent and accurate picture of secondary & recycled aggregate use in Gloucestershire.

Link to Minerals & Waste Local Plans

106. The core output indicator monitored within this AMR objective is particularly linked to WLP Policy 12 on Inert Recovery & Recycling and MLP Policies SE1 and SE2 which relate to the safeguarding and efficient use of mineral resources.

[1] The Capita Symonds Report on Secondary & Recycled Aggregate Production can be found on the DCLG website – http://www.communities.gov.uk/archived/publications/planningandbuilding/surveyarisings2

AMR Objective 3:

"To safeguard sites suitable for the location of waste management facilities, or future mineral development from other proposed development."

107. Identifying suitable sites for minerals and waste development can prove to be extremely challenging. Mineral sites are principally restricted to those locations with the right underlying mineral resources, whilst sites for waste management are often found in areas of development pressure where competition for land is high.

108. As a result the planning system has an important role to play in identifying sites that could be developed for minerals and waste and for safeguarding such sites, where appropriate and necessary, from other forms of development. Furthermore, this approach may also be extended to existing waste management sites and also areas of potential workable minerals that could be sterilised by other surface development.

109. Monitoring within the AMR seeks to assess the effectiveness of promoting the development of minerals and waste facilities in Gloucestershire upon identified sites and the implementation of a site safeguarding strategy for existing operations. It will achieve this by reviewing all development types on preferred areas identified in the Adopted Minerals and Waste Local Plans *(MLP and WLP)* and within a Mineral Consultation Area (MCA) for the Upper Thames Valley, also identified in the Minerals Local Plan. The county's preferred minerals and waste areas and MCA area are set out in Appendix B of this report.

Core Output Indicator

110. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of minerals and waste developments permitted upon existing sites or Preferred Areas identified within the adopted Minerals and Waste Local Plans (MLP & WLP).

Table 3: Minerals developments upon existing sites or preferred areas of the MLP

Minerals	No. of permitted mineral developments	As a % of all permitted mineral developments (11)
Preferred Area	**3**	**27%**
Existing Site ~	**8**	**63%**

Table 4: Waste developments upon existing sites or preferred areas of the WLP

Waste	No. of permitted waste developments	As a % of all permitted waste developments (25)
Preferred Area	**7**	**28%**
New Waste Sites*	**6**	**24%**
Existing Site ~ *(Excluding existing operations that take place upon preferred areas)* #	**12**	**48%**

~*Existing sites* - includes development proposals that expand or vary the operations upon existing sites

* New Sites – new operations or extensions to existing operations that are not preferred areas within the adopted minerals or waste plans

The number of non-minerals & waste developments permitted upon Preferred Areas identified within the adopted Minerals and Waste Local Plans (MLP & WLP)

Table 5: Non-minerals & waste developments upon Preferred Areas of the MLP or WLP	
Preferred Area Type	No. of non-minerals & waste developments
Minerals	**0**
Waste	**6**

Number of non-mineral applications determined for sites within the Mineral Consultation Area (see Appendix), which required a minerals consultation.

Table 6: Non minerals and waste applications within the Minerals Consultation Area (2006-2007)	
Total no. of applications in MCA	**253**
No. of mineral consultations received by the MPA	**0**
Total no. of refused applications in MCA	**25**
Of these how many were refused on M&W grounds	**0**
Total permitted applications in MCA	**193**

Targets

111. There were no targets set for this AMR objective

Discussion and Commentary

112. The majority of minerals and waste developments during the monitoring period *(83%)* were permitted upon existing sites or preferred areas as identified in the Minerals and Waste Local Plans. The remainder *(17%)* represented new permissions on land which was not allocated as a preferred area or included an extant minerals or waste use. All of these new permissions were for waste developments.

113. In terms of non-minerals and waste proposals and preferred areas, only a very small number *(6 in total)* of these types of developments were permitted during the monitoring period. All of these permissions occurred upon waste preferred areas.

114. During the monitoring period, the Mineral Consultation Area (MCA) for the Upper Thames Valley experienced a number of planning proposals *(253)* and permissions *(193),* and a small number of refusals *(25)*. However, none of these applications involved a consultation with the County Council as the Minerals Planning Authority (MPA).

115. In summary, the adopted Minerals and Waste Local Plans have appeared to demonstrate a degree of strategic direction for new minerals and waste developments and the maintenance of existing infrastructure. The majority of new proposals permitted during the monitoring period, were located upon preferred areas or represented projects for the expansion or variation of existing operations.

116. However, in terms of safeguarding there is less certainty as to the ability of both plans to secure existing minerals and waste site use. During the monitoring period a total of 6 non-minerals and waste proposals were permitted on waste preferred areas. Furthermore, the County Council as the Minerals Planning Authority (MPA) were not consulted on any development proposals submitted within the Mineral Consultation Area (MCA) for the Upper Thames Valley. The area of site safeguarding for minerals and waste will need to be carefully looked at within the emerging policies of the Minerals and Waste Core Strategies (MCS and WCS).

Link to Minerals & Waste Local Plans

117. The output indicators monitored within this AMR Objective are linked to MLP Policies A3, A4, A5, A6 & A7 relating to Aggregate Minerals Supply, MLP Policies SE3 relating to Safeguarding and Efficient Use of Mineral Resources, WLP Policy 4 Waste Management Facilities for Strategic Sites, WLP Policy 5 Waste Management Facilities for Local Sites, WLP Policy 6 Waste Management Facilities for 'Other' Sites and WLP Policy 7 Safeguarding Sites for Waste Management Facilities.

AMR Objective 4:

"To protect and improve the health and well-being of people living and working in Gloucestershire as well as visitors to the county."

118. Minerals and waste developments can potentially affect the health and well being of local communities in a number of ways such as – noise, traffic, or pollution.

119. The Environment Agency (EA) has a key role in monitoring the day-to-day operations of waste and, where appropriate, mineral developments. Local Environmental Health Officers (EHOs) and Local Health Authorities (LHA) are also involved in the management of potential health and well-being impacts as expert advisors on planning proposals.

120. Nevertheless, it is specifically through planning and the development control system that health and well being matters are carefully assessed. These issues need to be reviewed with all new proposals regardless of size or scale, to determine either their initial or cumulative impact.

121. To monitor health and well being impacts, the AMR proposes to look at minerals and waste permissions and refusals during the monitoring period. For permissions it will focus upon those schemes that propose operational *'improvements'* to existing sites. These may include – enclosures around noisy machinery; reduction of vehicle movements; or improvements to water treatment processes.

122. For refusals it will look at reasons relating to perceived dangers to health and well being from new proposals.

123. It is considered that this monitoring dataset will give an insight into the consideration of health and well being at the planning application stage and also the proactive response to health and well being concerns by minerals and waste industries.

Core Output Indicator

124. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of all permitted minerals and waste applications that were for operational *'improvements'* to existing sites that would reduce the risk to public health

125. Of the 36 permitted minerals and waste developments, 27 proposals were upon existing sites. From this, a total of 8 *(22%)* proposals were for operational improvements, which may directly or indirectly seek to reduce risk to health and well being.

The number and % of all minerals and waste refusals where public health concerns acted as part of the reason for refusal

126. Out of the 8 refused minerals and waste proposals, none citied reasons for refusal relating to public health and well being during the monitoring period.

Targets

127. There were no targets set for this AMR objective.

Discussion and Commentary

128. During the monitoring period, only a proportion *(22%)* of minerals and waste permitted proposals appeared to focus on improving health and well being impacts. Albeit this figure does not represent the majority of permissions, this should be qualified in that proposals for new and / or extended developments *(a further 25% of all permissions)* will have covered health protection and well being as part of their determination. It is also noted that all of the monitored *'improvement'* permissions related to the water management industry; the treatment of sewage and measures to reduce the potential for water contamination.

129. The data concerning refusals would initially appear to indicate that health and well-being did not play an important part in the determination of minerals and waste proposals. However, this conclusion must be qualified in that health and well being may have been adequately dealt with by each proposal during the monitoring period, either during pre-application discussions or negotiations and / or through the use of conditions with the subsequent permission.

Link to Minerals & Waste Local Plans

130. The output indicators monitored within this AMR objective were not specifically linked to a particular policy set out within the minerals or waste local plans. However, MLP Policy E15 and E20 relating to *Safeguarding and Enhancing the Environment*; MLP Policy R2 relating to *Reclamation of Worked out Mineral Sites*; MLP Policies DC3 and DC5 relating to *Development Control Criteria for Future Mineral Development*; WLP Policy 37 *Proximity to Other Land Uses*; WLP Policy 38 *Hours of Operation* and Policy 45 *Planning Obligations* have clear links to the achievements of output indicators and therefore could also be attributed to the overall AMR objective.

AMR Objective 5:

"To contribute to a sustainable Gloucestershire which provides excellent opportunities for education, economic development, employment and recreation to people from all social and ethnic backgrounds."

131. AMR Objective 5 is extremely wide ranging and could potentially be covered by a number of spatial aspects relating to minerals and waste developments.

132. However, in a number of cases, most of the spatial aspects reflected in Objective 5 have been adequately covered elsewhere in this report – for economics & employment *(see objective* 8); and more general sustainable development matters *(see Objectives 1 and 2)*.

133. Nevertheless, the AMR has been able to identify an appropriate minerals & waste link to Objective 5, through non-aggregate production for limestone, sandstone, clay and their associated landbanks.

134. Non-aggregate minerals worked in Gloucestershire such as building stone, are an important contributor to the maintenance and preservation of the county's historic building fabric. This in turn secures a recreational and economic resource primarily through tourism and more indirectly, an educational resource through the observation and practice of traditional construction techniques. Furthermore, non-aggregate minerals in the form of clay, also provide a direct economic and employment resource through a supply of mineral for brick manufacturing at brickworks.

Core Output Indicator

135. There are no core output indicators for this AMR objective.

Local Output Indicator

Annual production of non-aggregate stone

Table 7: Non-Aggregate Stone Production (2006)

Mineral Resource Area	Mineral Type	Annual Production 2005	As a % of total non-agg production
Cotswolds	Limestone	83723t	**93%**
Forest of Dean	Sandstone	6376t	**7%**
Total	**-**	**90099t**	-

136. During 2006, close to 0.1mt *(90,099t)* of non-aggregate mineral was supplied from Gloucestershire. The vast majority *(93%)* was made up of limestone from the Cotswold resource area.

Annual production of natural building & roofing stone

Table 8: Building & Roofing Stone Production (2006)			
Mineral Resource Area	Mineral Type	Annual Production 2005	As a % of total building & roofing stone production
Cotswolds	Limestone	48000t	**87%**
Forest of Dean	Limestone	1305t	**2%**
	Sandstone	5669t	**11%**
Total	**-**	**54974t**	-

137. Most of Gloucestershire's natural building and roofing stone *(87%)* was sourced from limestone in the Cotswold resource area. The remainder originated from the Forest of Dean and was made up of limestone and sandstone.

The non-aggregate Reserves *(excluding clay)*

Table 9: Non-aggregate Landbank *(excluding clay)* As at 31/12/2006			
Mineral Resource Area	Mineral Type	Estimated landbank	As a % of total Non-agg landbank
Cotswolds	Limestone	2.10Mt	**65%**
Forest of Dean	Limestone	0.50Mt	**16%**
	Sandstone	0.61Mt	**19%**
Total	**-**	**3.21Mt**	**-**

138. Excluding clay, the non-aggregate landbank for Gloucestershire totalled 3.21mt as at the end of 2006. The majority of remaining reserves lie within the Cotswold resource area *(65%)*. The remainder are located within the Forest of Dean.

Annual Clay production

Table 10: Clay Production * (2006)
70,000 tonnes

**Estimate based on 2004 production figures*

Clay reserves

Table 11: Clay reserves as of 31/12/2006* (2006)
0.86 million tonnes

**Estimate based on 2004 reserves and production figures*

Target

139. There were no targets set for this AMR objective.

Discussion and Commentary

140. During 2006, non-aggregate minerals *(0.09mt)* represented 4% of all minerals supplied from Gloucestershire.

141. The majority *(61%)* of non-aggregate minerals was made up of natural building and roofing stone. The remainder included agricultural lime and minerals for other non-specified activities.

142. In terms of natural building and roofing stone, 2006 supplies *(54,974t)* showed a decline *(down by 11,026t)* from the previous year, 2005 *(66,000t)*.

143. The non-aggregate landbank for Gloucestershire *(excluding clay)* for 2006 also appears to be relatively healthy *(35.6 years worth of potential working)* when considered against the overall annual production as of 2006. However, this figure should be viewed with caution, as it does not distinguish between reserves for natural building and roofing stone and other uses such as agricultural lime. It also fails to reflect the notable variation in natural building and roofing stone types present in the county, which can demonstrate marked difference in texture, colour and application.

144. Due to the lack of up-to-date data for Clay, it is not possible to provide a comparative analysis on previous years. However, it is anticipated that a full review of clay supplies and reserves will be carried out in the near future and will be reported upon.

Link to Minerals & Waste Local Plans

145. MLP policies NE1; *Building Stone* and NE2; *Clay* are directly covered by AMR Objective 5. The datasets used reflect the evolving annual level of production and availability for future working of non-aggregate minerals.

AMR Objective 6:

"To safeguard the amenity of local communities from the potential adverse impacts of minerals and waste development."

146. Minerals and waste developments can have a major impact on the amenity of local communities if not properly assessed, checked and monitored.

147. It is extremely difficult to define what *'amenity'* covers. However, it is generally described as – the satisfactory aspects of a location, which contribute to its overall character and enjoyment by residents and / or visitors.

148. Many impacts, which contribute to the overall pictures of 'amenity', are covered in other parts of this report, in particular AMR Objectives 4, 9 and 11, which deal with health, pollution and protecting the natural environment. Consequently, this part of the report is focused upon the remaining key amenity impacts – noise disturbance; operational hours; and lighting.

Core Output Indicator

149. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of minerals & waste permissions, which include conditions relating to -

- **Noise;**
- **Hours of Operations; and**
- **Lighting**

150. Of the 36 minerals and waste permissions granted during the monitoring period, 26 *(72%)* contained conditions relating to the relevant amenity issues. The full dataset on amenity can be found below within Table 12.

Table 12: Conditions relating to amenity

Amenity Issue	No. of permissions	As a % of permission including amenity conditions	As a % of total permissions (36)
Noise	19	73%	53%
Hours	25	96%	69%
Lighting	10	38%	28%
Totals	**26**	**-**	**72%**

NB. Some permissions contain more than one condition relating to the amenity issues being monitored

The number and % of minerals and waste refusals where amenity was cited within the reason for refusal

151. Of the 8 refused minerals and waste proposals during the monitoring period, a total of 2 citied 'amenity impacts' within their reasons for refusal. This represents 25% of the total number of refusals.

Targets

152. There were no targets set for this AMR objective.

Discussion and Commentary

153. The need for amenity conditions is very much dependent upon the nature of the operations being proposed and the proximity to nearby sensitive land uses. Certain operations and sites will therefore require far more stringent conditions than others.

154. Nevertheless, the monitoring data would suggest that the issue of 'amenity' is a key consideration during the determination of minerals and waste proposals. The majority of permissions granted *(72%)* include conditions relating to this matter. Furthermore, amenity impacts formed part of the refusal reason in a quarter *(25%)* of all refusals issued during the monitoring period.

155. For the minerals and waste permissions granted without amenity conditions *(28%)*, these proposals related to retrospective schemes, which had already been completed and as such would have impacted upon local amenity; and ancillary developments for which extant permissions should already cover amenity issues.

Link to Minerals & Waste Local Plans

156. WLP policy 38 – *Hours of Operation* specifically relates to the monitoring of AMR objective 6. However, other policies can also be partially linked. These include: MLP Policies E15, E16, E17, E18, E19, E20 concerned with safeguarding and enhancing the environment; Policy NE2 – O*ther Non-energy Minerals*; Policy EM1 – *Energy Minerals*; MLP Policy R2 relating to the reclamation of worked out mineral sites; MLP Policies DC2, DC3, DC5 and DC7 relating to development control criteria; WLP Policy 37 – *Proximity to Other Land Uses*, WLP Policy 40 – *Traffic*; WLP Policy 41 – *Public Rights of Way*; WLP Policy 43 – *After Use* and WLP Policy 45 – *Planning Obligations*.

AMR Objective 7:

"To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society."

157. Minerals contribute greatly to our prosperity and quality of life, and are major factors in developing sustainable communities. Consequently, sufficient and appropriate provision must be made to meet demand for minerals now and in the future.

158. Conserving mineral resources from inappropriate development is also an important aspect of minerals planning and falls within the wider sustainability agenda of ensuring resources for future generations. Within this AMR the issue of conserving mineral resources is covered under AMR Objective 3.

159. The datasets set out under this AMR objective are concerned with the annual period of 2006 rather than the prescribed monitoring period 2006 –2007.

Core Output Indicator

Annual production of primary land-won aggregates *(Crushed Rock and Sand & Gravel)*

Table 13: Annual production of aggregates (2006) (In million tonnes)		
Time Period	Crushed Rock Limestone	Sand & Gravel
2006	1.81Mt	0.72Mt

Local Output Indicator

Annual Production of Crushed Rock divided between the two resource mineral areas of Gloucestershire – Forest of Dean and the Cotswolds

Table 14: Annual production of crushed rock aggregates (2006)		
Crushed Rock Resource Area	Annual Production (in million tonnes)	As a % of total crushed rock Production
Forest of Dean	1.31 Mt	72%
Cotswolds	0.50 Mt	28%

Aggregate Reserves for Crushed Rock and Sand and Gravel

Table 15: Aggregate Reserves as at 31/12/2006		
Time Period	Crushed Rock	Sand & Gravel
31/12/2006	31.26Mt ~	8.60Mt

~ This figure removes 'dormant' reserves

Targets

160. There were no targets set for this AMR objective

Discussion and Commentary

161. Crushed rock and sand & gravel production during 2006 has fallen by 0.14mt and 0.31mt respectively since 2005. Production in 2006 has also dropped by as much as 0.16mt for crushed rock and 0.08mt for sand & gravel, when considered against the previous 5-year average production rates (2001-2005).

162. The production split for crushed rock between the two key resource areas of the Forest of Dean and the Cotswolds, has also changed since the previous year, although only by a 1% increase from the Cotswolds resource area.

163. As at the end of 2006, the aggregate landbank for Gloucestershire had risen by 2.41 million tonnes for crushed rock and 0.75 million tonnes for sand & gravel, compared to the previous year – 2005. This rise has also had an impact on the remaining years of the landbank. This now stands at 12.81 years for crushed rock and 7.54 years for sand & gravel.

164. Albeit that production should have resulted in a reduction in the remaining landbank during 2006, several new extraction proposals received planning permission and a re-evaluation of reserves was carried out at a number of existing operations. The consequence of these actions has resulted in a slight replenishment of the overall aggregate landbank.

Link to Minerals & Waste Local Plans

165. Minerals Local Plan (MLP) Policies A1, A2 and A3 relating to aggregate minerals supply, are specifically monitored by AMR Objective 7. MLP Policies A4, A5 and A6, also relating to aggregate minerals supply and Policies SE1, SE2, SE3 and SE4 are relevant to this AMR Objective.

166. Increasing the production of secondary & recycled aggregates should have an impact on the overall aggregate supply for the county. As a consequence, Waste Local Plan (WLP) Policies 12, regarding inert recovery & recycling, and 36 for waste minimisation can also be linked to AMR Objective 7.

AMR Objective 8:

"To provide employment opportunities in both rural and urban areas of the county, promoting diversification in the economy."

167. Minerals and Waste developments can provide employment opportunities in both rural and urban areas of Gloucestershire.

168. In addition to the operational roles on-site, employment opportunities can arise from indirect activities such as transportation and servicing.

169. At present accurate employment data cannot easily be aggregated down to total jobs covered by minerals and waste industries. However, sector data has been used in the contextual indicators (CIs) for this report *(see section 2)*.

170. For the purposes of this AMR the development of new minerals and waste facilities has been seen as the most reliable indicator available for determining job creation from minerals and waste industries. Although this indicator cannot provide any employment figures or reconcile the impact of extending and expanding operations, the creation of brand new facilities should offer an insight into economic activity and the potential to stimulate the local minerals and waste job market.

Core Output Indicator

171. There are no core output indicators for this AMR objective.

Local Output Indicator

Number of new minerals and waste management developments permitted during the monitoring period.

~ - *'New'* in this context only relates to brand new facilities and does not include extended, expanded or revised minerals ad waste operations.

172. Of the 36 minerals and waste permissions granted during the monitoring period, 5 *(14%)* were classified as new developments that could result in new employment opportunities within the minerals and waste sector.

Targets

173. There were no targets set for this AMR objective.

Discussion and Commentary

174. The AMR dataset on *'new'* facilities appears to show a degree of economic activity through new permissions *(14%)*, to genuinely generating new employment opportunities.

175. However, this statement needs to be heavily qualified in that it does take into account changes that may have occurred within the existing network of minerals and waste developments. These could include closure, downsizing, and / or internal expansion. Furthermore, the current

dataset excludes extension and expansion permissions for minerals and waste development. These types of developments may also generate a change in employment prospects. However, it is extremely difficult to distinguish between those developments that represent only operational expansions such as quarry extensions, and those, which represent company expansions with a potential increase in workforce – such as additional machinery and increased capacities.

176. In conclusion the current AMR monitoring of minerals and waste developments and employment shows clear limitations. As a result it will require a significant revision in the future if it is to make any meaningful contribution to monitoring local strategies and policies.

Link to Minerals & Waste Local Plans

177. Minerals Local Plan (MLP) policies E16 for safeguarding and enhancing the environment; NE1 and NE2 relating to clay and building stone; EM1 and EM2 relating to energy minerals; and DC2 and DC3 concerning development control criteria, represent the most applicable minerals policies for AMR objective 8.

178. In terms of Waste Local Plan (WLP) policies – 4, 5, 6, 7 relating to facilities and operations; and 8,9,10, 11, 12, 13, 14, 15,16 and 42 relating to different types of waste management facilities and after use, can be linked to AMR objective 8.

AMR Objective 9:

"To protect, conserve and enhance Gloucestershire's biodiversity, natural environment, landscape and tourist assets including the historic environment."

179. Gloucestershire has a rich and diverse environment, which includes a range of local, regional and national designations and assets.

180. Protecting the county's environment from inappropriate development is a key planning priority. To help monitor whether this is occurring, this AMR objective has been focused upon minerals and waste proposals and environmentally designated areas.

181. Although this approach is quite basic and does not indicate potential levels of impact, it should give an insight into the land-use pressures of minerals and waste on designations used to protect and manage certain environmental features and qualities. It is also important to note that not all designations are easy to map or cover distinct areas, which can be monitored.

Core Output Indicator

182. There are no core output indicators for this AMR objective.

Local Output Indicator

The number of minerals and waste proposals determined upon international, national and local environmental designations.

Table 16: Minerals and waste planning proposals on sites with environmental designations

	AONB	Green Belt	KWS
Permitted Applications			
Minerals	4	0	1
Waste	3	2	0
Total	**7**	**2**	**1**
Refused Applications			
Minerals	0	0	0
Waste	1	0	0
Total	**1**	**0**	**0**

The number and % of minerals and waste refusals where environmental matters such as landscape and historic concern, were citied in the refusal reasons.

183. Out of the 8 refused minerals and waste proposals, 3 *(38%)* contained refusal reasons citing environmental matters.

Targets

184. There were no targets set for this AMR objective

Discussion and Commentary

185. Minerals and waste developments within AONBs make up the majority *(70%)* of permissions upon environmental designations. This is unsurprising as over

50% of the county is covered by AONB designations. Furthermore, it is well known that much of the county's mineral resources also lie within an AONB designation.

186. Of all of the international, national, regional and local designations present in Gloucestershire, it is also unsurprising that the three included within table 16 were affected. As already explained AONB designations cover a large area of the county; the county's Green Belt falls over an area of intense development pressure; and there are numerous key wildlife sites (KWS) dotted across Gloucestershire.

187. Of the total refusal reasons for minerals and waste developments during the monitoring period, 3 *(38%)* included environmental matters. These were as follows – archaeological interest; unacceptable impact upon a nearby landscape; bat protection; and proximity to a Special Area of Conservation (SAC).

188. Albeit environmental matters did not appear to be a majority reason for refusals, the data does suggest that this issue is sufficiently robust enough to be supported through the development control process.

Link to Minerals & Waste Local Plans

189. Minerals Local Plan (MLP) Policies E1, E2, E3, E4, E5, E6, E8, E9, E10 relating to safeguarding and enhancing the environment; R2 and R4 concerning reclamation of worked out mineral sites and DC5 covering development control criteria can be linked to AMR Objective 9.

190. In terms of Waste Local Plan (WLP) Policies – 23, 24 and 25 relating to nature conservation; 26, 27 and 35 for landscape and the Green Belt; and 28, 29, 30 and 31 covering archaeology and the historic environment, are the most applicable to AMR Objective 9.

AMR Objective 10:

"To prevent flooding, in particular preventing inappropriate development in the floodplain and to ensure that development does not compromise sustainable sources of water supply."

191. Gloucestershire has an incredibly strong relationship to its *'water resource'.* It is estimated that the county has over 5000 kilometres of watercourses running across it. Geographically, Gloucestershire is dominated by floodplain land created by the widening of the River Severn to a substantial Estuary. Geologically it is also underlain by a major aquifer of high to intermediate vulnerability.

192. For the residents of the county, water can act as a provider and a major hazard. The key rivers of Gloucestershire and in particular the River Severn have supported economic and cultural growth for centuries through agricultural irrigation and as a means of transport and trade. However, in low-lying areas, frequent and often severe flooding has resulted in episodes of significant damage to both livelihoods and homes. The advent of climate change may increase this risk by intensifying local flooding events.

193. For all future development, a careful balance needs to be struck in Gloucestershire between the *'need'* for the proposal, the management of flood risk and the safeguarding of water resources.

194. For minerals and waste development, water resource is also a very important issue due to heighten concern over potential disruption to and / or contamination of watercourse and water supplies.

195. For monitoring purposes, the AMR proposes to highlight two key water resource issues – *flooding and water supplies*. In respect of flooding it will look at permitted developments and refusals on the county's designated floodplain, whilst for water supplies it will review the use of this matter in refusal reasons. The monitoring of water pollution and contamination issues is adequately addressed later in this report under AMR Objective 11.

Core Output Indicator

196. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of minerals & waste permissions located upon designated floodplain land

197. Of the 36 mineral and waste developments granted during the monitoring period, a total of 8 *(22%)* developments were located upon areas designated as floodplain land.

The number and % of minerals & waste refusals where the *floodplain* and *safeguarding water supplies* acted as part of the reason for the refusal

198. Of the 8 minerals and waste developments refused during the monitoring period, 1 *(12.5%)* highlighted water resource

safeguarding as one of the grounds for refusal. No refusals were based upon siting within a designated floodplain.

Targets

199. There were no targets set for this AMR objective.

Discussion and Commentary

200. Of all minerals and waste developments permitted during the monitoring period, only a small number *(25%)* were within the designated floodplain. Of the 9 developments that were permitted, 8 *(88%)* related to existing operations in the form of extensions, upgrades, or changes of use. 4 of these permissions were at sand and gravel sites in the Cotswold Water Park and 2 were in association with sewage treatment works. The new development was for a flood alleviation scheme.

201. Although the dataset only provides an annual *'snapshot'* of minerals and waste development in the floodplain, it does elude to some form of control over development within this sensitive designation. This may be as a result of heightened awareness of floodplain issues either prior to, and / or during the determination of new proposals.

202. In terms of refusals, only one application was refused on the grounds of water supply safeguarding. Although only a very limited dataset, this may indicate that prospective proposals are appropriately resolving water supply issues as part of their application; either within their submission and / or through the acceptance of conditions. It may also demonstrate that less certain and risky schemes in terms of safeguarding water supplies, are simply not coming forward due to the prospect of failure.

203. No targets were set for this AMR objective. However, *Planning Policy Statement 25: Development and Flood Risk* makes provision for Strategic Flood Risk Assessments and Site-Specific Flood Risk Assessments and the implementation of this policy may provide the opportunity to develop targets for future AMR reports.

Link to Minerals & Waste Local Plans

204. The Minerals Local Plan policies specifically related to this AMR Objective are Policies E11, E12 and E13 (Safeguarding and Enhancing the Environment) and Policy DC5 (Development Control Criteria for Future Mineral Development).

205. The Waste Local Plan policies specifically related to this AMR Objective are Policies 33 and 34 (Water) and Policy 45 (Planning Obligations).

AMR Objective 11:

"To protect and enhance Gloucestershire's environment – (the land, the air and water) from pollution and to apply the precautionary principle."

206. Pollution control is a major concern with minerals and waste developments as their operational activities can give rise to potentially damaging pollution impacts such as – gaseous emissions; particulates; bio aerosols; leakages; and water, land and soil contamination. As a result is it extremely important that pollution control is carefully reviewed during the determination of all development proposals.

207. For AMR monitoring, reviewing the use of planning conditions offers a basic insight into the significance of pollution control with minerals and waste developments. The frequency of different conditions should also indicate key areas where restrictions are deemed necessary. Furthermore, monitoring pollution control through planning refusals, also gives an insight into the minerals & waste industry's ability to overcome and address concern over potential pollution impacts.

Core Output Indicator

208. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of minerals & waste approvals that included conditions concerning pollution control

209. Of the 36 minerals and waste developments granted during the monitoring period, 26 *(72%)* contained pollution control conditions. Broken down between condition types, all permitted minerals and waste developments sought to control water impacts. However, only 13 proposed developments *(50%)* included conditions related to air protection.

The number and % of all minerals & waste refusals where environmental protection acted as part of the reason for refusal

210. Out of the 8 refused minerals and waste developments during the monitoring period, 4 *(50%)* included pollution control matters within the reasons for refusal.

Targets

211. There were no targets set for this AMR objective.

Discussion and Commentary

212. During the monitoring period, pollution control appeared to be a notable issue with the determination of minerals and waste developments. The majority of new permissions *(72%)* contained conditions relating to this matter. According to the dataset, *'water pollution'* was also the most significant pollution control issue for new permissions. This is unsurprising in Gloucestershire, due to the presence of a

substantial aquifer, a complex groundwater and network and the fact that minerals and waste operations often evoke heightened concerns over water pollution.

213. A review of environmental controls and refusal reasons also shows the local importance and concern over pollution in general. During the monitoring period, half of all refusals *(50%)* citied environmental pollution concerns as one of the reasons for rejecting such schemes.

Link to Minerals & Waste Local Plans

214. The key Minerals Local Plan (MLP) policies monitored through AMR Objective 11 include – E11 and E13 for safeguarding and enhancing the environment; and DC1 covering development control criteria.

215. From the Waste Local Plan (WLP), Policies 33 for water; 37 regarding proximity to other land uses; and 45 for planning obligations are most applicable in respect of AMR objective 11.

AMR Objective 12:

"To reduce the adverse impacts of lorry traffic on communities, through reducing the need to travel, promoting more sustainable means of transport (including through sensitive routing and the use of sustainable alternative fuels) and to promote the management of waste in one of the nearest appropriate installations."

216. Many minerals and waste developments are often located in rural, remote and distant locations, away from urban centres and key market areas. These locations are rarely served, other than from road transport, which offers limited capacity to handle minerals and waste freight. Where urban and urban fringe locations are available, these are also, more often subject to challenging highway issues and limited alternative forms of transport.

217. As a result new minerals and waste developments must carefully consider how they are going to reconcile a number of potential adverse impacts resulting from road transport –

- Noise and vibration;
- Pollution and health related impacts;
- Highway safety; and
- More global issues associated with vehicle emissions.

218. The determination of minerals and waste developments provides an opportunity to remove and / or mitigate against potential adverse impacts from road transport. This can be achieved either through revisions to proposals or through road / highways related conditions. Examples of these include – provision for wheel-washing facilities; the sheeting of lorries; restricted vehicle movements and routing plans to avoid unsuitable and sensitive areas.

219. The monitoring of AMR Objective 12, seeks to review the consideration of road transport with new minerals & waste proposals during the monitoring period and whether pro-active measures are being used to deliver a reduction in potential adverse impacts.

Core Output Indicator

220. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of minerals & waste permissions that included one or more of the following highway conditions

- **Restricted vehicle numbers;**
- **Restricted tonnages;**
- **Restricted routings; and**
- **Highway mitigation measures** – *the need for Wheel washing, lorry sheeting etc.*

221. Of the 36 minerals and waste permissions granted during the monitoring period, 24 *(67%)* included highways conditions, as defined within the LOI. A breakdown of the conditions is presented in table 17.

Table 17: The application of highway conditions (2006 – 2007)			
Type of conditions	Frequency of use	As a % of permissions including highway conditions	As a % of all permissions (2006-2007)
Vehicle numbers	2	8%	6%
Tonnage	17	71%	47%
Routing	6	25%	17%
Mitigation	20	83%	56%
Total	**24**	-	**67%**

NB. Some permissions contain more than one highway condition being monitored

The number and % of all minerals and waste refusals, where highways was citied as part of the reason for refusal

222. Out of the 8 minerals and waste developments refused during the monitoring period, 3 *(38%)* included highway matters as one of the grounds for refusal.

Targets

223. There were no targets set for this AMR objective.

Discussion and Commentary

224. Road transport appears to be a key consideration in the determination of new minerals and waste developments in Gloucestershire. During the monitoring period, over two-thirds of all new permissions *(67%)* included conditions seeking to restrict and / or mitigate against highway impacts. Similarly a notable proportion *(38%)* of refusals during same period, citied highways matters as one of the decision-making factors.

225. Provision for mitigation measures such as wheel washing, represented the most frequently used set of conditions, with an occurrence rate of 56% with all minerals and waste permissions.

226. During the monitoring period a total of 12 *(33%)* of the permitted minerals and waste developments did not include highways conditions. A number of factors may explain their exclusion from this important issue –

- Permission for ancillary development and / or operations, with no material change in handling or transport capacity; and
- Retrospective development, where the substantive minerals or waste activity has already been completed.

Link to Minerals & Waste Local Plans

227. The key Minerals Local Plan (MLP) Policies associated with AMR Objective 12 are – E19, E20 and E21 covering safeguarding and enhancing the environment; and DC5 relating to development control criteria.

228. The principle Waste Local Plan (WLP) policies applied to AMR Objective 12 include – 3, which sets out the *'Proximity Principle'*; 39 for transport, 40 covering traffic and 45 regarding planning obligations.

AMR Objective 13:

"To restore mineral sites to a high standard in order to achieve the maximum environmental and nature conservation benefits."

229. Although a temporary development, mineral working can irreversibly change landscapes and environments. Uncontrolled and / or poorly managed change can result in significant adverse impacts, particularly where sites are abandoned following cessation of working. This is an unsustainable approach to minerals planning and represents a missed opportunity and resource.

230. However, mineral working can provide excellent opportunities to create and enhance the environment, including the biodiversity potential of an area. There are numerous examples across Gloucestershire, where worked-out mineral sites have supported a range of important environmental designations such as key wildlife sites, RIGS and SSSIs.

231. To ensure that maximum benefit is achieved from worked-out mineral sites, restoration must be given due attention and consideration at the earliest possible opportunity. This may include the approval of full and complete restoration schemes alongside new working.

232. Accurately recording and monitoring the success of mineral restoration represents a notable challenge for the AMR. Minerals working and associated restoration rarely occur as discreet operations and are often practiced as a progressive technique. Furthermore, restoration can take a number of years to be completed stretching over several AMR monitoring periods.

233. Consequently, this early AMR has sought to focus on the policy mechanism behind securing restoration schemes at mineral sites rather than the quality and delivery of them on the ground.

Core Output Indicator

234. There are no core output indicators for this AMR objective.

Local Output Indicator

The number and % of mineral permissions that include conditions concerning the delivery of mineral restoration schemes

235. During the monitoring period 11 mineral permissions were granted for minerals related developments. A total of 9 *(82%)* contained conditions concerning the delivery of mineral restoration schemes.

Target

236. There were no targets set for this AMR objective.

Discussion and Commentary

237. Mineral restoration appears to be a key consideration for Gloucestershire in the determination of new minerals developments. This is recognised in the high proportion *(82%)* of new developments

that include conditions for minerals restoration schemes.

238. Improvements in AMR monitoring over time may enable a more sophisticated assessment of mineral restoration schemes, particularly for determining their implementation and level of quality.

Link to Minerals & Waste Local Plans

239. Minerals Local Plan (MLP) Policies E9 and E10 for safeguarding and enhancing the environment); R1, R2, R3 and R4 for reclamation of worked out mineral sites and DC5 covering development control criteria are most applicable with AMR objective 13.

240. As this AMR objective is specifically concerned with mineral restoration, no Waste Local Plan (WLP) policies apply.

AMR Objective 14:

"To reduce waste to landfill and in dealing with all waste streams to actively promote the waste hierarchy (i.e. Prevent, Reduce, Reuse, Recycle, Dispose) to achieve the sustainable management of waste."

241. Managing waste in Gloucestershire has been dominated by landfilling. Currently a significant amount of waste, which could be re-used or recycled, is disposed of to landfill sites.

242. This approach puts pressure on resources, which could otherwise be offset by the reuse or recycling of waste and will soon contravene National and European regulations. Waste therefore needs to be considered more as a resource, rather than something to be discarded.

243. Consequently, national and regional strategies support the practical local delivery of diverting waste away from disposal to landfill, through the principles of the *'Waste Hierarchy'* and subsequent development of appropriate waste management infrastructure.

244. The Waste Hierarchy promotes the practical application of waste management practices and technologies based on their relative level of sustainability. At the top of the hierarchy is – waste prevention; followed by reduction; reuse; recycling and then disposal.

Core Output Indicator

Annual capacity of waste management facilities by waste type

Table 17: Waste Management Facility Capacity (As at March 2007)

Waste Facility Type	Capacity (in tonnes)
Windrow Composting (MSW & C&I)	69,000t and 10,000t
In-Vessel Composting (MSW & C&I)	25,000t and 48,000t
Household Recycling Centres	81,000t
MSW Transfer Stations	107,000t
C&I Re-use/Recycling	161,000t
MSW Recovery/Treatment	0
C&I Recovery/Treatment (inc. transfer)	160,000t
Metal Recycling Sites	261,000t
Metals Transfer	125,000t
C&D Management (Recycling/Transfer/Treatment)	520,000t
Hazardous Waste Transfer (short term)	3,000t (throughput 2004)
Hazardous Waste Management (Treatment/Recycling)	38,000t (throughput 2004)
Landfill Capacity	**Capacity ('000 m³)**
Biodegradable / Inert landfill void space	8,900,000
Inert landfill void space (Exemptions)	1,250,000
Hazardous landfill void space	3,500,000

Amount of municipal waste arising, and managed by management type and the percentage each management type represents of the waste managed.

Table 18: Municipal Solid Waste (MSW) Managed between 2005-06 and 06-2007		
Waste Management Method	Amount of MSW managed *(in tonnes)* and % of total MSW	
	2005/06	2006/07
Composted	32,265t	41,602t
As % of annual MSW	**10.3%**	**12.8%**
Recycled *(incl. inert)	66,381t	*67,573t
As % of annual MSW	**21.3%**	**20.8%**
Disposed to Landfill	213,255t	214,968t
As % of annual MSW	**68.5%**	**66.3%**
Total	**311,901t**	**324,143t**

Local Output Indicator

245. There were no local output indicators for this AMR objective.

Targets

To secure Gloucestershire's LATS targets up to the annual period 2020/2021, minimum provisional waste management capacity must be in place for the following –

- **18,000t of windrow*;**
- **71,000t of in-vessel composting*;**
- **149,000t of recycling;**
- **150,000 – 270,000t of residual treatment;**
- **71,000t transfer; and**
- **3.1m^3 of landfill capacity,**

** It is important to consider these minimum capacity targets together in that the development of In-vessel composting will lead to the diversion of compostable waste away from more traditional windrow techniques. For more information on this matter, please refer to the Waste Core Strategy Technical Evidence Paper WCS-A Waste Data.*

To ensure the provisional capacity for recycling, reusing and / or recovering 83% of all managed commercial and industrial waste in Gloucestershire by 2020 – *in accordance with RWMS policies p.74-75.*

To ensure the provisional capacity for recycling, reusing and / or recovering 180,000 tonnes per annum of all managed inert construction and demolition waste in Gloucestershire by 2020 – *in accordance with RWMS appendix C table.*

Discussion and Commentary

246. During the monitoring period, 109,175t *(34%)* of municipal sold waste (MSW) was composted or recycled rather than disposed of to landfill, 214,968t *(66%)*.

247. In terms of waste management capacities, up to 94,000t was deemed theoretically available for composting MSW during the monitoring period, with the vast majority *(74%)* for windrow techniques and the remainder for in-vessel methods. In relation to the AMR and projected LATS targets, present capacities show a promising move in the right direction for securing the diversion of waste from disposal to landfill. Minimum windrow capacity has already been demonstrated *(69,000t).* However, the challenge going forward is to secure an increase in in-vessel composting capacity by at least a further 46,000t per annum to meet the minimum requirements. This must be achieved, whilst maintaining windrow composting at an acceptable level *(no less than 18,000t per annum).*

248. At present there is insufficient up-to-date waste management data on the remaining waste streams (C&I and C&D) covered by the AMR objective, to carry out a meaningful assessment of capacities against targets.

249. As a consequence, this AMR seeks to signpost the Waste Core Strategy Technical Evidence Paper WCS-A *Waste Data* for a more in-depth review of the consequences for future waste policy as a result of existing capacity and projected managed wastes. Nevertheless, following the publication of waste management data for C&I and C&D for 2006-2007, the respective AMR will undertake a full review of capacities and targets.

Link to Minerals & Waste Local Plans

250. The most relevant Minerals Local Plan (MLP) policies, which cover AMR Objective 14, are SE1 and SE2 that focus on safeguarding and the efficient use of resources.

251. In terms of the Waste Local Plan (WLP), Policy 36 for waste minimisation; 4, 5, 6, 7 covering site allocation matters; and 8 through to 22 regarding waste management facilities types are most applicable in relation to AMR objective 14.

AMR Objective 15:

"To reduce contributions to and to adapt to Climate Change."

252. Reducing climate change impacts represents a relatively new spatial challenge, although in part, much of its delivery is already covered under the umbrella of *'sustainable development'*.

253. In the context of minerals and waste planning, seeking to reduce climate change impacts can be observed through policy commitments to reduce green house emissions by improving efficiency in processing, reducing transportation, and shifting away from landfill. Many of these aspects have already been looked at in detail within this report under a number of other AMR objectives.

254. Nevertheless, while landfill still remains a major part of the county's waste management system, a number of short-term measures should also be looked at to support climate change reductions. The most significant of these is the application of landfill gas as a potential energy source, which uncontrolled can produce significant amounts of greenhouse gas *(i.e. methane)*.

255. Collecting methane gas as a form of energy is also classified as a renewable process. This offers a further positive in terms of reducing climate change impacts as it can contribute towards reducing our dependence on greenhouse gas emitting fossil fuels.

256. For the purposes of the AMR, monitoring of AMR Objective 15 is focused upon the capture and usage of landfill gas in energy production.

Core Output Indicator

257. There are no core output indicators for this AMR objective.

Local Output Indicator

Energy capacity in mega watts from landfill and the % this represents of total renewable energy capacity from Gloucestershire

258. As at the end of the monitoring period at March 2007, capacity for 9.88 Mega Watts of renewable energy was present in Gloucestershire. A total of 7.92 Mega Watts of capacity was derived from landfill sources. This equates to 80% of the county's renewable energy capacity.

Targets

259. There were no targets set for this AMR objective.

Discussion and Commentary

260. Based on the previous year's renewable energy capacity, the contribution made from landfill gas sources has decreased by 0.25 Mega Watts. This is not an unsurprising reduction and is also not necessarily a negative change when viewed in the wider context of sustainability.

261. The production of landfill gas is dependant upon a replenishing supply of

biodegradable waste that is disposed of to landfill. However, evolving waste policy actively seeks to reduce the volume of biodegradable waste sent to landfill, which in turn, should reduce the amount of gases being generated. Although there is only a limited dataset, the reduction in renewable energy capacity from landfill gas for 2006 and 2007, may represent this decline.

262. Whilst following the *'waste agenda'* of landfill reduction appears to result in reduction in one of the current sources of renewable energy – landfill gas, the wider sustainability gains should be borne in mind. The sole aim of reducing waste to landfill is to ensure that it is utilised more as a direct resource and that its production is ultimately minimised. In time this approach should help reduce our energy needs and thus reduce the pressure on finding more renewable energy sources.

Link to Minerals & Waste Local Plans

263. The most appropriate Minerals Local Plan (MLP) policies associated with AMR objective 15 are – E19, E20 and E21 covering transport.

264. For the Waste Local Plan (WLP), Policies 39 and 40 for transport; and those relating to sustainable waste management *(4 to 22)* and waste reduction measures *(36)* are deemed most appropriate for AMR Objective 15.

Appendix A
Key Monitoring Stakeholders

The following organisations have been categorised as key monitoring stakeholders for the purposes of the AMR. A draft copy of the AMR was made available to each of these organisations for consultation during late November 2006. Information that has been collected and, or will be collected in the future, is likely to be dependant upon continued close working and partnership between each of these organisations and Gloucestershire County Council : -

- Cheltenham Borough Council
- Cotswold District Council
- Environment Agency
- English Heritage
- Forest of Dean District Council
- Gloucester City Council
- Government Office for the South West (GOSW)
- Highways Agency
- Natural England
- South West Regional Assembly (SWRA)
- Stroud District Council
- Tewkesbury Borough Council

Appendix B
Preferred Areas for Minerals and Waste from the MLP and WLP and MCA from the MLP

Minerals Local Plan Preferred Areas

1. Stowhill/Clearwell
2. Drybrook
3. Stowfield
4. Daglingworth
5. Huntsmans
6. Dryleaze Farm
7. Cerney Wick
8. Horcott/Lady Lamb Farm
9. Kempsford/Whelford

Waste Local Plan Preferred Areas

Strategic Sites

1. Wingmoor Farm West, Bishop's Cleeve
2. Wingmoor Farm East, Bishop's Cleeve
3. Sudmeadow, Hempsted
4. Ind. Estate, Former Moreton Valence Airfield
5. Sharpness Docks, Sharpness
6. Reclaimed Canal Land, Netheridge

Local Sites

7. Gloucester Business Park
8. Moreton-in-Marsh, Cotswolds
9. Phoenix House, Elmstone Hardwick
10. Land Rear of Dowty, Staverton
11. Railway Triangle Site, Gloucester
12. Land Adjacent to Sudmeadow, Hempsted
13. Forest Vale Industrial Estate, Cinderford
14. Canal Works, Lydney
15. Lydney Industrial Estate, Lydney
16. Wilderness Quarry, Mitcheldean
17. Wingmoor Farm South East, Bishop's Cleeve
18. Fosse Cross Industrial Estate, Calmsden
19. Old Airfield, Moreton Valence
20. Land Adj. To Gasworks, Gloucester
21. Netherhills Pit, Frampton-on-Severn

The Upper Thames Valley Mineral Consultation Area (MCA)